



# Management Plan

## For Antarctic Specially Protected Area No. 159 CAPE ADARE, BORCHGREVINK COAST

(including Historic Site and Monument No. 22, the historic huts of Carsten Borchgrevink and Scott's Northern Party and their precincts)

### Introduction

The Area, comprising an area of ~2.4 ha, is located at 71° 18' 26.2" S, 170° 11' 28.3" E on the northwestern coast of Cape Adare, at the northern extremity of the Adare Peninsula, Victoria Land, on the Borchgrevink Coast, Ross Sea. The Area was originally designated for the significant historic values of the huts built by the British Antarctic (*Southern Cross*) Expedition of 1898-1900 led by Carsten E. Borchgrevink, listed as Historic Site and Monument (HSM) No. 22, which was designated in Recommendation VII-9 (1972). The remains of a hut built by Scott's Northern Party on the British Antarctic (*Terra Nova*) Expedition of 1910-13 is close by. The Area was designated as Specially Protected Area No. 29 through Measure 1 (1998) and renamed and renumbered as Antarctic Specially Protected Area (ASPA) No. 159 by Decision 1 (2002). Revisions to the Management Plan were adopted through Measure 2 (2005), Measure 11 (2010), and Measure 14 (2015).

### 1. Description of values to be protected

There are three main structures in the Area (Map 1, Inset 3). Two huts were built in February 1899 during the British Antarctic (*Southern Cross*) Expedition led by Carsten E. Borchgrevink (1898-1900). One hut served as a living hut and the other as a store. They were used for the first winter spent on the Antarctic continent. The collapsing remains of a third hut built in February 1911 for the Northern party led by Victor L.A. Campbell of Robert Falcon Scott's British Antarctic (*Terra Nova*) Expedition (1910-13), is situated 20 meters to the north of Borchgrevink's living hut. The Northern party wintered in this hut in 1911.

In addition to these features there are numerous other historic relics located in the Area. These include stores depots, a latrine structure, two anchors from the ship *Southern Cross*, an ice anchor from the ship *Terra Nova*, and supplies of coal briquettes. Other historic items within the Area are buried in guano. Collectively, the three huts and associated historic relics are listed as HSM No. 22. The grave of a member of the British Antarctic (*Southern Cross*) Expedition is located ~1.5 km northeast of the Area and is listed as HSM No. 23.

Cape Adare is one of the principal sites of early human activity in Antarctica as it includes the first building erected on the continent. It is an important symbol of the Heroic Age of Antarctic exploration and, as such, has considerable historical significance. Some of the earliest advances in the study of earth sciences, meteorology, and flora and fauna in Antarctica are associated with the two earliest expeditions based at this site. The history of these activities and the contribution they have made to the understanding and awareness of Antarctica give this Area significant historic, scientific, and aesthetic value.

Cape Adare is situated in Environment U – North Victoria Land geologic based on the Environmental Domains Analysis for Antarctica (Resolution 3 (2008)) and in Region 8 – North Victoria Land based on the Antarctic Conservation Biogeographic Regions (Resolution 6 (2012)).



## 2. Aims and objectives

---

The aim of the Management Plan is to provide protection for the Area and its features so that its values can be preserved. The objectives of the Management Plan are to:

- avoid degradation of, or substantial risk to, the values of the Area;
- maintain the historic values of the Area through planned conservation work which may include:
  - a. 'on-site' maintenance;
  - b. monitoring the condition of artefacts and structures, and the factors that affect them;
  - c. conservation of the site, buildings, and artefacts which may occur on or off site;
  - d. mapping and otherwise recording the disposition of historic items in the hut environs; and
  - e. recording other relevant historic data.
- minimise human disturbance to the Area, its features and artefacts whilst allowing for managed access to Borchgrevink's hut and other parts of the Area; and
- allow visits for management purposes in support of the aims of the Management Plan.

## 3. Management Activities

---

The following management activities shall be undertaken to protect the values of the Area:

- Copies of this management plan shall be made available to the principal permit holder of all groups visiting the Area and/or the leader of any groups operating in the adjacent vicinity at Cape Adare;
- National Antarctic Programmes shall take steps to ensure the boundaries of the Area and the restrictions that apply within are marked on relevant maps and nautical / aeronautical charts;
- Personnel (national programme staff, field expeditions, tourist expedition leaders and pilots) operating in the adjacent vicinity of, accessing or flying over the Area shall be specifically instructed by their national programme, tour operator or appropriate national authority to observe the provisions and contents of the Management Plan, including on the location, boundaries and restrictions applying to access and landings within the Area;
- Markers or signs erected within or near the boundary of the Area or in nearby facilities shall be secured and maintained in good condition, and removed when no longer required;
- A programme of conservation work shall be undertaken on the historic huts and associated structures and artefacts within the Area;
- Systematic monitoring shall be carried out to assess the impacts of visits and the results and any related management recommendations, including on limits to the number of visitors allowed at any one time or in any given season, shall be included in reviews of this Management Plan.
- Interested National Antarctic Programmes and relevant groups and organisations should consult together and coordinate to ensure:
  - a. skills and resources, particularly those related to conservation techniques, are developed and deployed to assist with protection of the historic values of the Area;
  - b. the defined limits on visitor numbers are not exceeded; and
  - c. the above management activities are implemented.

## 4. Period of Designation

---

Designated for an indefinite period.



## 5. Maps

**Map 1:** ASPA No. 159 Cape Adare – regional overview. Inset: Ross Sea region.

Projection: Lambert Conformal Conic; Standard parallels: 1st 71°20' S, 2nd 71°30' S; Central Meridian: 170°20' E; Latitude of origin: 72°S; Spheroid and horizontal datum: WGS84. Contour interval 200 m. Data source: SCAR Antarctic Digital Database v7.1 (2019).

**Map 2:** ASPA No. 159 Cape Adare – topography and historic features.

**Inset:** HSM No. 22, showing the main historic features within the Area.

**Projection:** Lambert Conformal Conic; Standard parallels: 1st 71°17' S, 2nd 71°19' S; Central Meridian: 170°12' E; Latitude of origin: 72°S; Spheroid: WGS84. Main map contour interval 100 feet (15 foot contour shown on Ridley Beach) – contours spatially adjusted to approximate position in imagery.

**Data sources:** Coastline, ponds and streams digitised from WorldView-2 imagery (© Digital Globe 05 Dec 2019). Inset orthophotograph prepared by Korean Polar Research Institute (J. H. Kim pers. comm. Mar 2020). Historic features identified by L. Meek, Antarctic Heritage Trust (NZ) (pers. comm. Mar 2020).

## 6. Description of the Area

### 6(i) Geographical coordinates, boundary markers and natural features

#### Overview

Cape Adare is a prominent, mostly ice-free, volcanic headland located at the northern extremity of the Adare Peninsula, Victoria Land, on the Borchgrevink Coast, Ross Sea (Map 1, Insets 1 and 2). The headland rises to an elevation of over 350 m (~1150 feet) (Map 1). Robertson Bay lies to the west of the Adare Peninsula. The Area is located ~1.7 km southwest of Cape Adare on the southern shore of Ridley Beach, which is a large, flat, depositional shingle feature of roughly triangular shape occupying an area of ~100 ha. From the western extremity of Ridley Beach, South Beach extends ~1.5 km southeast towards Boulder Rock, while North Beach extends around the same distance northeast towards Cape Adare.

The whole of Ridley Beach and the lower western slopes of the Cape Adare promontory are occupied by the largest Adélie penguin (*Pygoscelis adeliae*) colony in Antarctica. The breeding population numbered 504,332 pairs in 2018 (F. Shanhun pers. comm. 2020). The colony has been identified as Antarctic Important Bird Area No. 165 (Harris et al. 2015). The penguins occupy most of the Area and access to the historic huts is often constrained by the need to avoid disturbance to breeding birds.

Approximately 300 pairs of South polar skuas (*Stercorarius maccormicki*) nest on Ridley Beach and on the Adare Peninsula (Harris et al. 2015), and Weddell seals (*Leptonychotes weddellii*) also haul out along the shoreline of Ridley Beach. Southern giant (*Macronectes giganteus*), Snow (*Pagodroma nivea*), Wilson's storm (*Oceanites oceanicus*) and Antarctic (*Thalassoica antarctica*) petrels, Emperor (*Aptenodytes forsteri*) and King (*A. patagonicus*) penguins, and Leopard (*Hydrurga leptonyx*), Elephant (*Mirounga leonina*) and Antarctic fur (*Arctocephalus gazella*) seals may also occasionally be seen.

#### Boundaries

The boundaries of the Area, described in a clockwise direction from the northwest corner are:

- North: a line extending ~110 m along the line of latitude 71° 18' 23" S from the northwest corner of the Area at 71° 18' 23" S, 170° 11' 23" E to the northeast corner at 71° 18' 23" S, 170° 11' 34" E. The northern boundary lies ~115 metres north of Scott's Northern Party hut;
- East: a line extending ~250 m along the line of longitude 170° 11' 34" E from the northeast corner of the Area to the southeast corner at 71° 18' 31" S, 170° 11' 34" E. The eastern boundary lies ~50 metres east of Borchgrevink's stores hut;
- South: a line extending ~124 m from the southeast corner of the Area to the southwest corner at 71° 18' 29" S 170° 11' 23" E, following the mean high-water coastline along South Beach.
- West: a line extending ~190 m along the line of longitude 170° 11' 23" E from the southwest corner of the Area to the northwest corner. The western boundary lies ~55 metres west of Borchgrevink's living hut.

#### Human activities

Due to challenging access conditions at the site, to date limited conservation has been carried out on the historic features at Cape Adare by New Zealand. The New Zealand based non-governmental organisation Antarctic Heritage Trust has a planned programme of more substantive conservation of Borchgrevink's and Scott's huts and associated artefacts partly underway and planned for full implementation in coordination with National Antarctic Programmes operating in the region.

Tourist groups regularly visit the historic site and the nearby vicinity. Numbers of visitors may fluctuate depending on a range of factors, including sea ice and weather conditions, available logistics, and the number of tour operators in any given year.



## 6(ii) Access to the Area

The Area may be accessed by first travelling to locations adjacent to but outside of the boundaries by either aircraft, small boat, or on foot. Aircraft access to sea ice in Robertson Bay may be possible, although conditions vary and it may be difficult to get close to the Area without causing disturbance to penguins and skuas. Access into and within the Area is on foot. Particular routes for access to the Area have not been designated. The specific conditions for access by pedestrians, small boats, vehicles, overflight and aircraft landings are set out in Section 7(ii).

## 6(iii) Location of structures within and adjacent to the Area

The major features of the Area include Borchgrevink's *Southern Cross* Expedition living hut and the unroofed stores hut. Scott's Northern Party hut, which is mostly collapsed, is situated ~20 m northwest of Borchgrevink's living hut. All structures within the Area are of historic origin, apart from a temporary conservation workshop erected in 2018 (see below) and a brass plaque installed ~7 m west of Borchgrevink's stores hut to commemorate HSM No. 22.

Numerous historic artefacts are present within the Area. These include stores depots, a latrine structure, two anchors from the ship *Southern Cross*, an ice anchor from the ship *Terra Nova*, and supplies of coal. Many of these items are either partly or completely covered in guano from Adélie penguins which breed within the Area.

The grave of a member of the British Antarctic (*Southern Cross*) Expedition, the Norwegian biologist Nicolai Hanson, is located ~1.5 km northeast of the Area at an elevation of ~1,000 feet (~300 m) on the Adare Peninsula and is listed as HSM No. 23 (Map 1). Hanson, who died at the age of 28, was the first person to be buried on the Antarctic continent. The grave is located at approximately 71° 18' 04"S, 170° 13' 51"E and is marked by a large boulder with an iron cross, a brass plaque and a white cross marked out in quartz pebbles. Originally, Hanson's name was outlined with the quartz pebbles, although recent photographs indicate this is now less distinct. An old ice axe rests on the surface of the grave. Louis Bernacchi wrote eloquently of the location: "There amidst profound silence and peace, there is nothing to disturb that eternal sleep except the flight of seabirds. In the long dark winter night, the brilliant and mysterious Aurora Polaris sweeps across the sky and forms a glorious arc of light over the Cape and the grave. In the summer the dazzling sunlight shines perpetually upon it" (Bernacchi 1901).

A provisions depot was established beneath a rock overhang at the base of cliffs behind Ridley Beach, following a fire at Borchgrevink's huts on 24 July 1899. The depot was seen by R. Priestly of Scott's Northern Party in 1911, and again by P. Wilson in 1982 and 1990. A search for the depot was made in 2015 but it could not be found, and its exact location is currently unknown (L. Meek, Antarctic Heritage Trust, pers. comm. Mar 2020).

A second depot originating from Scott's Northern Party in 1911 is situated on Adare Peninsula ~100 m northwest of HSM No. 23 Hanson's grave, and was recorded present in 1982 by Harrowfield (1982) and again in 1990 by Harrowfield (L. Meek, pers. comm. 2020).

Temporary facilities in support of conservation work were installed at Cape Adare in 2018 (Map 2 and Inset). These include living and storage facilities on South Beach ~100 m east of the Area, and a workshop installed to support repairs ~10 m west of Borchgrevink's huts. The conservation work is expected to be carried out over several seasons.

Two Automatic Weather Stations (AWS) are installed outside of the Area: one on South Beach and a second on the ridge of Adare Peninsula at an elevation of ~350 m (Map 2).

The nearest permanently operating scientific stations to the Area are Mario Zucchelli (Italy) and Jang Bogo (South Korea), which are located ~330 km south of the Area (Map 1, Inset 1).

## 6(iv) Location of other protected areas in the vicinity

The nearest protected area is ASPA No. 106 Cape Hallett, which is located at the northern extremity of Hallett Peninsula, ~115 km south of the Area.

## 6(v) Special Zones within the Area

There are no special zones within the Area.

# 7. Terms and conditions for entry permits

## 7(i) General permit conditions

Entry into the Area is prohibited except in accordance with a permit issued by an appropriate national authority. A permit may be issued by a national authority to cover a number of visits in a season. Conditions for issuing a permit for entry to the Area are that:

- The activities are related to conservation, research and/or monitoring purposes, or for reasons essential to the management of the Area, or are activities related to educational, outreach or recreational activities, including tourism, provided they do not conflict with the objectives of this Management Plan;
- The activities permitted are in accordance with this Management Plan;
- The activities permitted will give due consideration via the environmental impact assessment process to the continued protection of the historic values of the Area;
- The permit shall be issued for a finite period; and
- The permit, or a copy, shall be carried by the principal permit holder, or their designated representative, when visiting the Area.



## 7(ii) Access to and movement within the Area

Access into the Area shall be on foot. Vehicles and aircraft landings are prohibited within the Area. All access to, and movement within, the Area and over Ridley Beach in general should avoid disturbance to birds and mammals.

### Foot access and movement within the Area

- 1) Pedestrian access into the Area is generally made from South Beach (Map 2) although specific paths or routes of access have not been defined, as landing sites may vary according to conditions.
- 2) Movement within the Area shall be in accordance with the Code of Conduct in Section 7(iii).
- 3) Care should be exercised when walking within the Area, as delicate artefacts may be present on the ground, perhaps obscured by a thin snow covering, and may be difficult to see.

### Small boat access

- 1) Access by small boat (when there is open water) should be made to the Ridley Beach coastline, and thence access shall be made on foot (Map 2). Landing locations will be influenced by local sea and ice conditions, and specific sites of access have not been defined.

### Aircraft access and overflight

Taking into account the historic values as well as local concentrations of breeding birds, aircraft within and near the Area shall operate according to strict observance of the following conditions:

- 1) Helicopter landings within the Area are prohibited. Helicopter landings result in rotor wash, which can cause damage to the historic features;
- 2) Overflight of the Area by piloted aircraft below 2000 ft (~610 m) is prohibited, except in accordance with a permit issued by an appropriate national authority.
- 3) Aircraft may land outside of the Area on sea ice in Robertson Bay when conditions allow and in the vicinity of Hanson's grave (HSM No. 23) (Map 1). Overflight / landings of all aircraft on or within ½ nautical mile (~930 m) of Ridley Beach are strongly discouraged, except for scientific or management purposes. Helicopter access to Hanson's grave should avoid approach, overflight and landings west and north of the grave and instead approach from the south where possible. Pilots operating near the Area should follow the Guidelines for the Operation of Aircraft near Concentrations of Birds (Resolution 2 (2004)) as a minimum requirement.
- 4) Overflight below 2000 ft (610 m) and landings within the Area by Remotely Piloted Aircraft Systems (RPAS) are prohibited except in accordance with a permit issued by an appropriate national authority. RPAS use within the Area should follow the Environmental Guidelines for Operation of Remotely Piloted Aircraft Systems (RPAS) in Antarctica (Resolution 4 (2018)).

### Limits to the number of people allowed within the Area

Control of the number of people and movement within the Area, both at any given time and cumulatively over time, is necessary to minimise damage and deterioration precipitated by:

- a) physical foot traffic of visitors across the vulnerable features of the Area and from crowding inside Borchgrevink's huts in particular; and
  - b) measurable changes in ambient conditions (i.e. temperature and humidity) inside Borchgrevink's hut.
- The maximum number within the Area at any time (including guides and those within the huts) shall be: **40 people**.
  - The maximum number within either of Borchgrevink's huts at any time (including guides) shall be: **4 people**.
  - The annual maximum number of visitors to the Area shall be limited to: **2,000 people**.
  - The observed effects of monitored visitor levels at historic sites in the Ross Sea region suggest that significant adverse impacts could be caused by exceeding the maximums specified above.
  - These limits have been set based on the best advice available from conservation advisory agencies (which include conservators, archaeologists, historians, museologists and other heritage protection professionals). These limits shall be reconsidered at each management plan review, when the limit may be adjusted based on monitored impacts at the site.
  - All educational, outreach and recreational (including tourism) visits shall be supervised by a trained guide nominated by the operator (refer Section 7(x)). Adequate supervision of visits to the Area is necessary to prevent damage caused by crowding and by actions inconsistent with the Code of Conduct in Section 7(iii).



### **7(iii) Activities that may be conducted within the Area**

- Visits for conservation or management purposes;
- Educational, outreach and/or recreational visits, including tourism;
- Scientific activity that does not detract from or damage the values of the Area.

Visitors should adhere to the following Code of Conduct for site visits, except where conservation, research, monitoring or management activities specified in the permit require otherwise:

#### **Code of Conduct**

- Smoking or the use of any naked flames in the Area, and particularly in or around Borchgrevink's hut, is strictly prohibited, as fire is a major risk;
- Hazardous materials, such as asbestos, chemicals, mould, etc., are present on site. Avoid handling anything within the protected area and huts.
- Thoroughly clean grit, dirt, guano, ice and snow from boots using the brushes provided before entering Borchgrevink's hut to reduce floor abrasion. Larger groups are recommended to lay the tarpaulin provided outside to keep footwear and personal items clean whilst waiting to enter the building;
- Remove any clothing made wet by sea water, and any sea ice crystals from boots, as salt particles accelerate corrosion of metal objects;
- Do not touch, move or sit on any items or furniture in the huts – handling artefacts causes damage;
- As many areas are cramped and artefacts can be accidentally bumped, do not take bags or wear packs inside, do not use 'selfie' sticks for photos, and avoid tripods or monopods when the maximum number of visitors (4) are in the hut at one time;
- Only use tripods or monopods with flat bottomed rubber bases as opposed to those with metal spikes which can damage the hut floor;
- When moving around the site, take great care not to tread on any artefacts, which may be difficult to see; and
- Visits should be recorded in the visitor book provided. This allows data on times and numbers of visitors to be correlated with temperature and humidity data automatically logged inside the hut.

### **7(iv) Installation, modification or removal of structures / equipment**

- Existing structures shall not be altered, and new structures shall not be erected in the Area, or scientific equipment installed, except when authorised by permit for conservation, educational or scientific purposes that do not detract from or damage the values of the Area as specified in Section 1.
- Historic items shall not be removed from the Area, unless specified in a permit issued in accordance with the provisions of Section 7(viii).

### **7(v) Location of field camps**

- Borchgrevink's huts, or other structures in the Area, shall not be used for living purposes.
- Camping is prohibited within the Area.
- A temporary camping area has been established on South Beach ~100 m east of the Area (Map 2), and this should be used when necessary for conservation or research purposes. To minimise the footprint of camps established on Ridley Beach, when necessary and to the extent practical this site should be re-used.

### **7(vi) Restrictions on materials and organisms that may be brought into the Area**

In addition to the requirements of the Protocol on Environmental Protection to the Antarctic Treaty, the following are restrictions on materials and organisms that may be brought into the area:

- Deliberate introduction of animals, plant material, micro-organisms or soils into the Area is prohibited;
- Visitors shall take precautions to prevent the accidental introduction of animals, plant material, micro-organisms and soils by ensuring that their equipment brought into the Area is clean. To the maximum extent practicable, footwear and other equipment used or brought into the area (including backpacks, carry-bags and other equipment) shall be thoroughly cleaned before entering the Area;
- Food shall not be consumed within the Area;
- Fuel, food, chemicals, and other materials shall not be introduced or stored within the Area, unless specifically authorised by permit for essential purposes connected with the conservation of the historic structures or the associated artefacts, and shall be stored and handled in a way that minimises the risk of their accidental introduction into the environment;
- All materials introduced shall be for a stated period only and shall be removed by the end of that stated period; and
- If release occurs which is likely to compromise the values of the Area, removal is encouraged only where the impact of removal is not likely to be greater than that of leaving the material in situ.



## **7(vii) Taking or harmful interference with native flora and fauna**

Taking or harmful interference with native flora and fauna is prohibited, except in accordance with a permit issued under Article 3 of Annex II of the Protocol on Environmental Protection to the Antarctic Treaty. Where animal taking or harmful interference is involved, this should, as a minimum standard, be in accordance with the SCAR Code of Conduct for the Use of Animals for Scientific Purposes in Antarctica.

## **7(viii) Collection of anything not imported by the permit holder**

- 1)** Material may be collected and removed from the Area for conservation or scientific reasons consistent with the objectives of this Management Plan in accordance with a permit issued by an appropriate national authority.
- 2)** Materials that pose a threat to the historic values of the Area, environment or human health may be removed from the Area for disposal, in accordance with a permit, where they meet one or more of the following criteria:
  - i.** the artefact presents a threat to the historic values, environment, wildlife or human health and safety;
  - ii.** it is in such poor condition that it is not reasonably possible to conserve it;
  - iii.** it does not contribute in any significant way to our understanding of the huts, their occupants, other artefacts, or the history of Antarctica;
  - iv.** it does not contribute to, or it detracts from, the visual qualities of the site or the hut; and/or
  - v.** it is not a unique or rare item;

and where such action is:

- vi.** undertaken by parties with appropriate heritage conservation expertise; and
  - vii.** part of an overall plan for conservation work at the site.
- 3)** National authorities should ensure that any removal of artefacts and assessment against the above criteria is carried out by personnel with appropriate heritage conservation expertise.
  - 4)** Artefacts judged to be of high historic value, which cannot be conserved on site with currently available techniques, may be removed in accordance with a permit for storage in a controlled environment until such time as they can safely be returned to the Area, which should be the preferred outcome unless there is a high risk that return would be likely to damage or destroy the integrity of the artefact(s).
  - 5)** Samples of soil and other natural materials may be removed for scientific purposes only in accordance with a permit issued by an appropriate national authority.

## **7(ix) Disposal of waste**

All human waste, grey water and other waste generated by work parties or visitors shall be removed from the Area.

## **7(x) Measures that may be necessary to continue to meet the aims of the Management Plan**

- Information on the requirements of this Management Plan shall be provided to all visitors.
- The Code of Conduct set out in Section 7(iii) shall be followed by all visitors, except where conservation, research, monitoring or management purposes require otherwise.
- Operators facilitating educational, outreach and recreational visits (including tourism) to the Area shall, prior to commencement of the summer season, nominate people with a working knowledge of both the site and this Management Plan to act as guides during visits and provide training appropriate to ensure they are capable of fulfilling their roles.
- All educational, outreach and recreational visits, including tourism, shall be supervised by a nominated guide, who is responsible for briefing visitors on the Code of Conduct and for ensuring their full compliance. The guide(s) shall actively monitor visitor activity within the Area, and in particular within the historic huts, and take corrective actions against any potential or actual breaches of the Management Plan and Code of Conduct.



## 7(xi) Requirements for reports

- The principal permit holder for each visit to the Area shall submit a report to the appropriate national authority after the visit has been completed in accordance with national procedures and permit conditions.
- Such reports should include, as appropriate, the information identified in the visit report form contained in the Guide to the Preparation of Management Plans for Antarctic Specially Protected Areas (Resolution 2 (2011)). The national authority should also forward a copy of the visit report and confirmation of site visitor numbers to the Party that proposed the Management Plan, to assist in managing the Area and reviewing the Management Plan.
- Any removal of materials in accordance with Section 7(viii) shall be detailed in the report, including the reason for removal and the current location of the items or the date of disposal. Any return of such items to the site shall also be reported to the appropriate national authority.
- Parties should, wherever possible, deposit originals or copies of such original visit reports in a publicly accessible archive to maintain a record of usage, for the purpose of any review of the Management Plan and in organising the scientific use of the Area.
- The appropriate authority should be notified of any activities / measures undertaken, and / or of any materials released and not removed, that were not included in the authorised permit.

## 8. Supporting documentation

**Antarctic Heritage Trust 2018.** *Antarctic historic huts of the Ross Sea region.* NZ Antarctic Heritage Trust, Christchurch.

Antarctic Treaty Parties. Guidelines for handling of pre-1958 historic remains whose existence or present location is not known. Resolution 5 (2001).

Antarctic Treaty Parties. Guidelines for the designation and protection of Historic Sites and Monuments. Resolution 3 (2009).

Antarctic Treaty Parties. Guidelines for the assessment and management of heritage in Antarctica. Resolution 2 (2018).

**Bernacchi, L. 1901.** *To the South Polar regions: Expedition of 1898-1900.* Hurst and Blackett, London.

**Harris, C.M., Lorenz, K., Fishpool, L.D.C., Lascelles, B., Cooper, J., Coria, N.R., Croxall, J.P., Emmerson, L.M., Fijn, R.C., Fraser, W.L., Jouventin, P., LaRue, M.A., Le Maho, Y., Lynch, H.J., Naveen, R., Patterson-Fraser, D.L., Peter, H.-U., Poncet, S., Phillips, R.A., Southwell, C.J., van Franeker, J.A., Weimerskirch, H., Wienecke, B. & Woehler, E.J. 2015.** *Important Bird Areas in Antarctica 2015.* BirdLife International and Environmental Research & Assessment Ltd., Cambridge.

**Harrowfield, D.L. 1982.** *Report on Canterbury Museum Antarctic Expedition Event K22 Cape Adare.* March 1982 report to the Antarctic Division, DSIR, Christchurch.

## List of boundary coordinates

Northwestern corner: 71° 18' 30"S 170°11' 33"E.

Northeastern corner: 71° 18' 30"S 170°11' 44"E.

Southwestern corner: 71° 18' 35.5"S 170°11' 33"E.

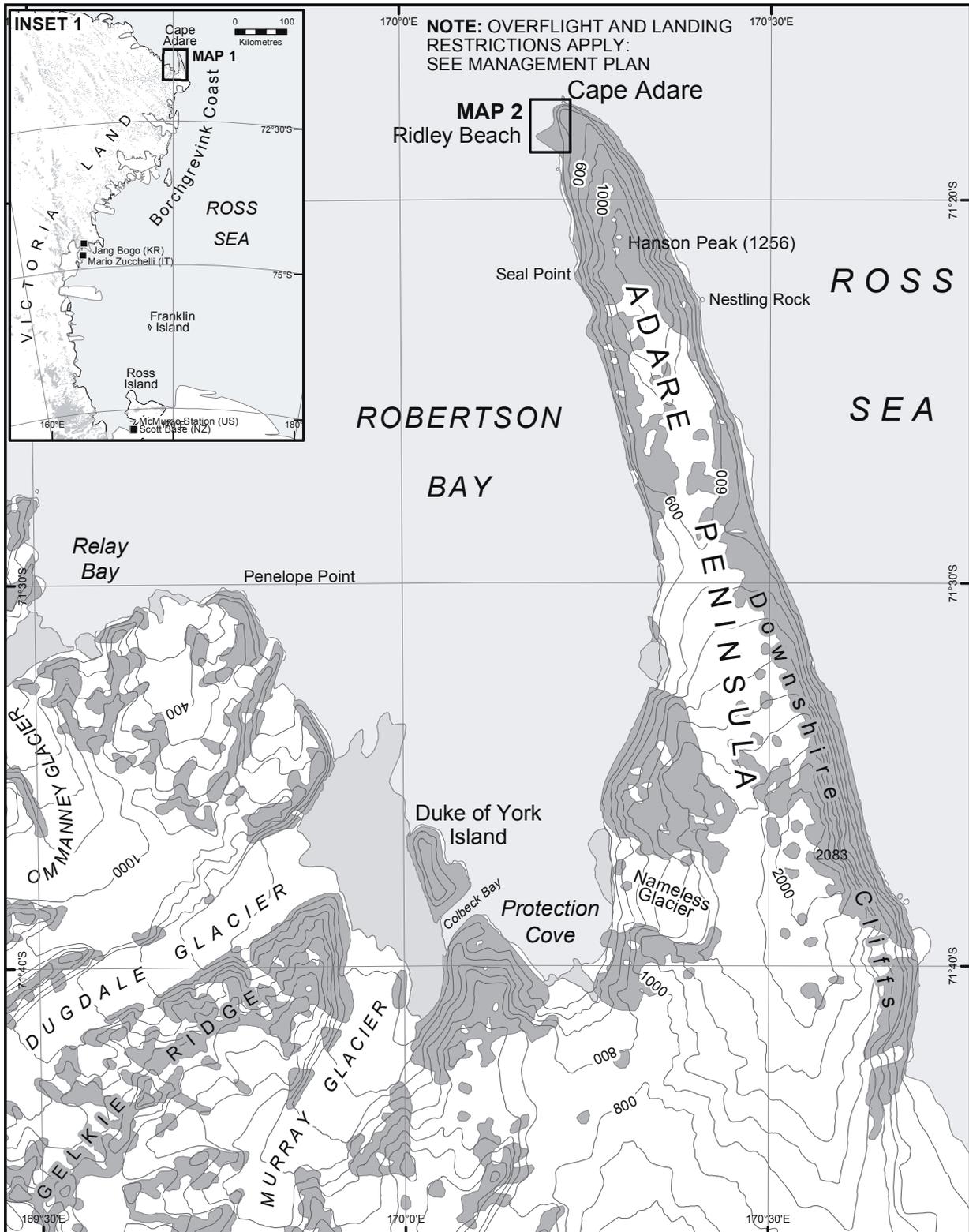
Southeastern corner: 71° 18' 38"S 170°11' 44"E.

Maximum northern extent: 71° 18' 30"S.

Maximum southern extent: 71° 18' 38"S

Maximum western extent: 170°11' 33"E

Maximum eastern extent: 170°11' 44"E.



**Map 1: ASPA No. 159 Cape Adare - Regional overview**

23 Mar 2020 (v4.0)  
 Antarctica New Zealand  
 Environmental Research & Assessment

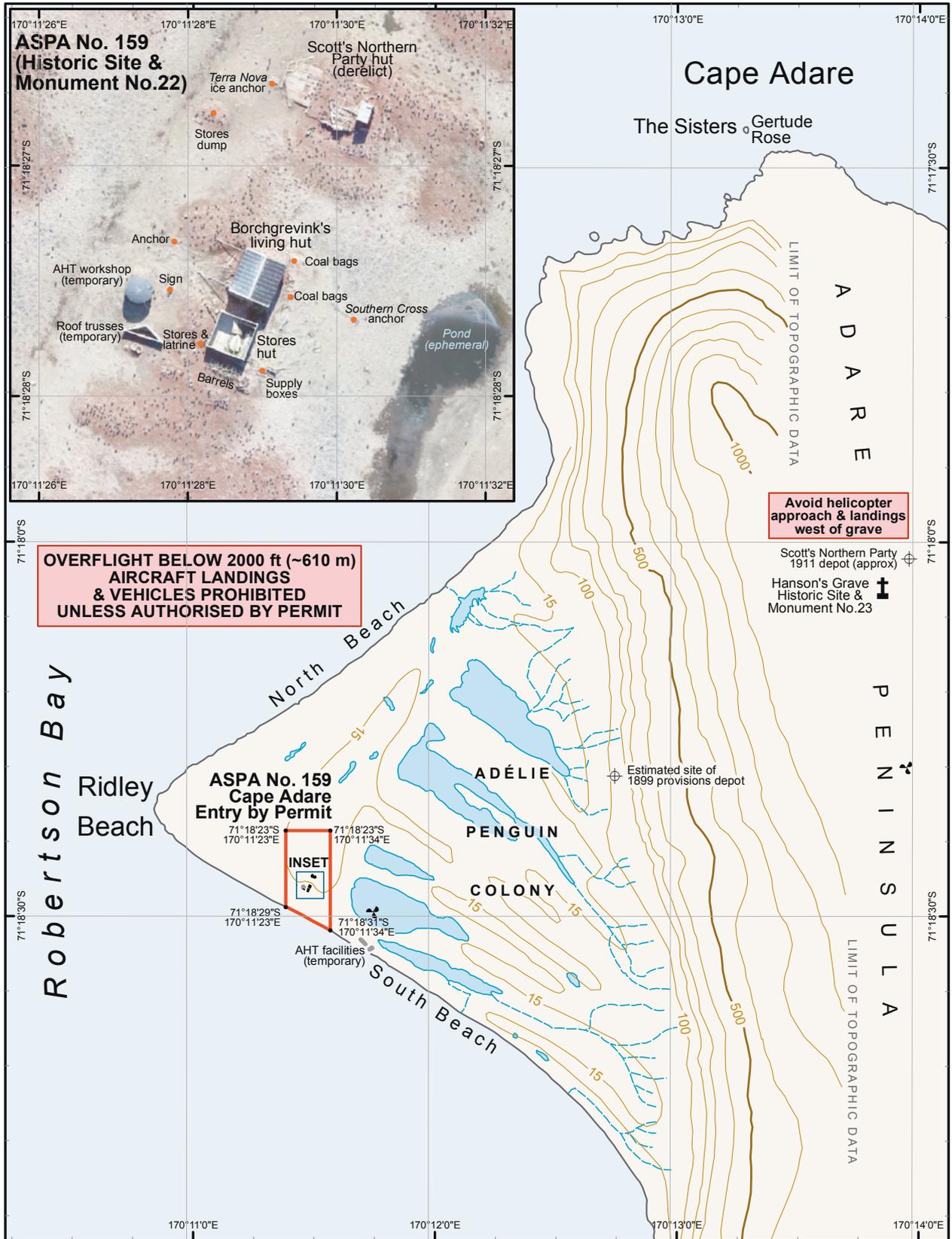


**Antarctica  
 New Zealand**

- Ocean
- Permanent ice
- Ice shelf
- Ice free ground
- Contours (200 m)



Projection: Lambert Conformal Conic  
 Spheroid and horizontal datum: WGS84;  
 Data: SCAR Antarctic Digital Database v7.1 (2019)  
 Contour interval: 200 m; Heights in metres.



**Map 2: ASPA No. 157 Cape Adare - topography & historic features**



03 Apr 2020 (v3.0)  
 United States Antarctic Program  
 Antarctica New Zealand  
 Korea Polar Research Institute  
 Environmental Research & Assessment



- Ocean
- Permanent ice
- Ice free ground
- Pond (ephemeral)
- Coastline
- Stream (ephemeral)
- Contour (500 ft)
- Contour (100 ft)
- Protected area boundary
- Historic building / artefact
- Antarctic Heritage Trust (NZ) facilities
- Automatic Weather Station
- Memorial cross
- Historic feature

Projection: Lambert Conformal Conic  
 Spheroid and horizontal datum: WGS84  
 Contours indicative: 100 feet (15' on Ridley Beach)  
 Data sources: topography Antarctica NZ (2019)  
 Historic features: identified by NZ AHT (2020)  
 Coast, ponds, streams: digitised from WVZ (Dec 2019)  
 Orthoimage: Korea Polar Research Institute (Jan 2020)  
 Geopositioning approximate (~5-10 m)